

TABLE OF CONTENTS

January - December 1993 • Volume 102

JANUARY

President's Acceptance Speech	IRWIN W. YOUNG	2
A Video Filing System Using Magneto-Optical Disks	Y. SASAKI, H. TAKAHASHI, K. UENO, H. INADA, and M. OKADA	3
A Study of Medical Image Data Compression	M. A. WONDROW, P. J. WEGWERTH, M. P. MITCHELL, and B. K. GILBERT	9
Avoiding the Pitfalls in Serial Digital Signal Distribution	RON WARD	14
Challenges in Full-Motion Video/Audio for Personal Computers	EDWIN J. KROEKER	24
Digital Television Broadcasting Dreams, Decisions, and Destinies	KENNETH P. DAVIES	32
SMPTE Holds Annual Elections		37
1993 SMPTE Advanced Television and Electronic Imaging Conference, NYC, Feb. 4-6, 1993		38
Emmys Awarded for Technological Achievement		40
Report on the 134th SMPTE Technical Conference and Equipment Exhibit, Toronto, Canada Nov. 10-13, 1992		41

FEBRUARY

New 8-14 Channel Coding for High-Density Recording ...	YOSHINOBU OBA and TOSHIHIRO UEHARA	114
Digital EDTV — An NTSC-Compatible Widescreen EDTV System Employing Digital Compression	HEE-YONG KIM and SAI NAIMPALLY	119
Digital HDTV Compression Techniques for Terrestrial Broadcasting	WILLIAM Y. ZOU	127
Digital Audio Synchronization in a Mixed-Media Plant	CHARLES MEYER	132
NVRSC: The Design of a Graphical Interface for a Router Switch Controller	NEILL ALLEN	136

MARCH

Digital Compatible HDTV Using Upconverted NTSC Video	PAUL A. SNOPKO and JONG G. KIM	186
Correction of Reproduced Color Errors Due to Bandwidth Limitation of the Color-Difference Signals	J. KUMADA, M. KANAZAWA, Y. KANATSUGU, and K. SHIBUYA	190
An HDTV 2/3-in. CCD Handheld Camera	K. MITANI, Y. FUJITA, F. OKANO, Y. TOYODA, H. ASADA, and T. NOBUSADA	196
The Ultimate Motion Imaging System	G. SETH SHOSTAK	202
The Design Challenges of Full-Motion Video for PC-Compatible Computer Systems	DAVID HODGSON	207
135th SMPTE Technical Conference and Equipment Exhibit, Los Angeles, Oct. 29-Nov. 2, 1993		217

APRIL

1992 Progress Report — Foreword	STANLEY N. BARON	284
Engineering Report	KENNETH P. DAVIES	287
Motion Pictures	JOHN L. BAPTISTA	289
Television	PAUL BERGER	295
Education	JOHN A. CARLSON, RICHARD L. THOMAS	339
135th SMPTE Technical Conference and Equipment Exhibit		343
Report on 1993 SMPTE Advanced Television and Electronic Imaging Conference,		344
Special Meeting of Voting Members of SMPTE, May 10, 1993		367

PART II

SMPTE Directory for Members		1-184
-----------------------------------	--	-------

TABLE OF CONTENTS

January - December 1993 • Volume 102

JANUARY

President's Acceptance Speech	IRWIN W. YOUNG	2
A Video Filing System Using Magneto-Optical Disks	Y. SASAKI, H. TAKAHASHI, K. UENO, H. INADA, and M. OKADA	3
A Study of Medical Image Data Compression	M. A. WONDROW, P. J. WEGWERTH, M. P. MITCHELL, and B. K. GILBERT	9
Avoiding the Pitfalls in Serial Digital Signal Distribution	RON WARD	14
Challenges in Full-Motion Video/Audio for Personal Computers	EDWIN J. KROEKER	24
Digital Television Broadcasting Dreams, Decisions, and Destinies	KENNETH P. DAVIES	32
SMPTE Holds Annual Elections		37
1993 SMPTE Advanced Television and Electronic Imaging Conference, NYC, Feb. 4-6, 1993		38
Emmys Awarded for Technological Achievement		40
Report on the 134th SMPTE Technical Conference and Equipment Exhibit, Toronto, Canada Nov. 10-13, 1992		41

FEBRUARY

New 8-14 Channel Coding for High-Density Recording ...	YOSHINOBU OBA and TOSHIHIRO UEHARA	114
Digital EDTV — An NTSC-Compatible Widescreen EDTV System Employing Digital Compression	HEE-YONG KIM and SAI NAIMPALLY	119
Digital HDTV Compression Techniques for Terrestrial Broadcasting	WILLIAM Y. ZOU	127
Digital Audio Synchronization in a Mixed-Media Plant	CHARLES MEYER	132
NVRSC: The Design of a Graphical Interface for a Router Switch Controller	NEILL ALLEN	136

MARCH

Digital Compatible HDTV Using Upconverted NTSC Video	PAUL A. SNOPKO and JONG G. KIM	186
Correction of Reproduced Color Errors Due to Bandwidth Limitation of the Color-Difference Signals	J. KUMADA, M. KANAZAWA, Y. KANATSUGU, and K. SHIBUYA	190
An HDTV 2/3-in. CCD Handheld Camera	K. MITANI, Y. FUJITA, F. OKANO, Y. TOYODA, H. ASADA, and T. NOBUSADA	196
The Ultimate Motion Imaging System	G. SETH SHOSTAK	202
The Design Challenges of Full-Motion Video for PC-Compatible Computer Systems	DAVID HODGSON	207
135th SMPTE Technical Conference and Equipment Exhibit, Los Angeles, Oct. 29-Nov. 2, 1993		217

APRIL

1992 Progress Report — Foreword	STANLEY N. BARON	284
Engineering Report	KENNETH P. DAVIES	287
Motion Pictures	JOHN L. BAPTISTA	289
Television	PAUL BERGER	295
Education	JOHN A. CARLSON, RICHARD L. THOMAS	339
135th SMPTE Technical Conference and Equipment Exhibit		343
Report on 1993 SMPTE Advanced Television and Electronic Imaging Conference,		344
Special Meeting of Voting Members of SMPTE, May 10, 1993		367

PART II

SMPTE Directory for Members		1-184
-----------------------------------	--	-------

MAY

Digital Image Compression Based on Visual Perception and Scene Properties ...	WILLIAM E. GLENN	392
Advanced Television Systems — The Situation in Germany and Central Europe ...	ULRICH REIMERS	398
A Novel Image-Compression Technique Using the Modular Algorithm	JIDONG SHEN	403
The Influence of Video Image Size and Resolution on Viewing-Distance Preferences	ARNOLD M. LUND	406
Factors That Will Shape Future HDTV Technical Plants	JAMES A. KUTZNER	416
135th Technical Conference and Equipment Exhibit		422

JUNE

HDTV and Film — Digitization and Extended Dynamic Range	LAURENCE J. THORPE	486
A Variable-Tracking Playback Development for Professional S-VHS Videotape Recorders	N. NEUBERT, R. NISHIMA, K. SHUDO, T. YASUDA, M. TAKEMURA, and S. NARITA	498
A 35mm Autostereoscopic System for Live-Action Imaging Using a Single Camera and Lens	CHRISTOPHER A. MAYHEW	505
European HDTV Operations (1250/50 Production/HDMAC Broadcast) in the Winter and Summer Olympic Games	MICHEL OUDIN	512
An Aqueous-Based Motion-Picture Film Cleaner — Final Report	R. W. BAUER, J. L. BAPTISTA, F. J. RICOTTA, E. F. SNOW, and Z. BOGDAN	518
135th Technical Conference and Equipment Exhibit		522
SMPTE Participation in 18th International TV Symposium and Technical Exhibition, Montreux ...		526

JULY

How Multimedia Will Change Our Industries (Point of View)	PAUL MARETH	605
Real-Time Animation with the Chyron Transform™	THOMAS J. ROSENBAUER and ROI AGNETA	607
A Videodisc Recorder for Broadcast Use ...	R. BAUARSCHI, I. NARUMI, A. PARSONS, and M. SUGIMOTO	612
Graphic Scaling and Validity of Japanese Descriptive Terms Used in Subjective-Evaluation Tests	NAGATO NARITA	616
Digital Telecommunications for Digital Audio/Visual Production	TOM SCOTT	623
135th SMPTE Technical Conference and Equipment Exhibit		626
SMPTE Participates in NAB Convention		630
Minutes of Special Meeting of Voting Members of SMPTE, May 10, 1993		631

AUGUST

Error Measurements in Studio Digital Video Systems	DAVID K. FIBUSH	688
Jitter Effects and Measurements in Serial Digital Television Signals	DAVID K. FIBUSH	693
A Proposal for an HDTV/ATV Standard with Multiple Transmission Formats	JAE S. LIM	699
Problems and Perspectives of Digital Terrestrial Television in Europe	B. MARTI, D. NASSE, P. BERNARD, and B. LE FLOCH	703
Digital Moving-Picture Exchange: File Format and Calibration	D. SNIDER, G. KENNEL, K. CURRY, and M. MCCrackan	712
135th SMPTE Technical Conference and Equipment Exhibit		715
Sections Officers and Managers as of July 1, 1993		724
1992 Financial Reports		726

SEPTEMBER

Networked Compact Disc Interactive ...	D. T. CHAI, G. G. HARTWICK, E. LUBCHENKO and J. NACHEM	773
A New Chip Set for Proposed SMPTE Standard SMPTE 259M — Serial Digital Interface ...	S. WEBSTER, E. FANKHAUSER, K. CHEN, J. FRANCIS, E. IOSZEF, T. ROSATI, I. RIDPATH, and P. MOORE	777
Applications of Motion Compensation to Standards Conversion and Film Transfer	B. R. MASON and R. N. ROBINSON	786

Video on Demand: Architecture, Systems, and Applications (Point of View).....	791
.....WINSTON HODGE, STUART MABON, and JOHN T. POWERS, JR.	
135th SMPTE Technical Conference and Equipment Exhibit.....	804
SMPTE Advanced Television and Electronic Imaging Conference, Feb. 4-5, 1994, Chicago, Ill.....	825
Letter to the Editor on Usage of the Word "Stereoscopic"	827
1993 Progress Report to Appear in April 1994 <i>Journal</i>	827
SMPTE Participation in 18th International TV Symposium and Technical Exhibition, Montreux, Switzerland, June 10-15, 1993, Report.....	828
SMPTE European Conference '93, Milan Trade Fair, Milan, Italy.....	830

OCTOBER

Multiplexing and Demultiplexing Digital Audio and Video in Today's Digital Environment	905
.....KEITH Y. REYNOLDS and JOE RAINBOLT	
Applying Constrained Optimization to Computer Graphics	910
.....JEFF GOLDSMITH and ALAN H. BARR	
The First Twenty Years of HDTV: 1972-1992	913
.....MARK I. KRIVOCHEEV	
The Interfacing of AES/EBU Serial Digital Audio Signals with D-1, D-2, and D-3 Format Digital Television Tape Recorders.....	931
.....MARTIN A. LILLEY	
Biographical Sketch: Ken Davies, SMPTE Engineering Vice-President	938
135th SMPTE Technical Conference and Equipment Exhibit.....	940
1994 SMPTE Advanced Television and Electronic Imaging Conference.....	955
1993 Progress Report to Appear in April 1994 <i>Journal</i>	960

NOVEMBER

Introducing the CBC Broadcasting Centre, Toronto, Canada.....	988
.....BRIAN D. BALDRY	
An Overview of the Mechanical Building Systems for the CBC Toronto Broadcast Centre.....	989
.....HERB BENJAMIN	
Planning of the Canadian Broadcasting Centre, Toronto, Canada.....	992
.....WILLIAM V. LAHT	
Acoustical Considerations for the CBC Broadcast Centre in Toronto.....	999
.....JEAN-PIERRE LEGAULT	
The Canadian Broadcasting Centre: Building Electrical and Production Lighting and Rigging Systems..	1003
.....PIERRE COUILLARD	
Design Considerations for Television Facilities in the CBC's Toronto Broadcast Centre.....	1007
.....JOHN WONSOWICZ	
Development of a Multimatrix Routing Switcher Control System for the CBC Toronto Broadcast Centre.....	1012
.....PAUL BRISCOE	
Training for the CBC's New Broadcast Centre.....	1018
.....PAUL KAISER	
Performance Evaluation and Acceptance Testing of Bit-Serial Digital Video Equipment and Systems at the CBC	1023
.....MICHAEL ROBIN and MICHEL POULIN	
1994 SMPTE Advanced Television and Electronic Imaging Conference.....	1031
SMPTE Presented with Emmy Award for Outstanding Achievement in Technological Development	1032

DECEMBER

TV Display Phosphors/Primaries — Some History	1095
.....LEROY DEMARSH	
"Gamma" and Its Disguises: The Nonlinear Mappings of Intensity in CRTs, Perception, Film, Video, and Computer Graphics	1099
.....CHARLES POYNTON	
Gray Scale Transformation of Digital Film Data for Display, Conversion, and Film Recording	1109
.....GLENN KENNEL and DAVID SNIDER	
Design Considerations for Serial Digital Television Systems	1120
.....KEITH Y. REYNOLDS	
Computer Graphics for Scanned Laser Displays	1125
.....PATRICK MURPHY and WILLIAM R. BENNER	
Electromagnetic Characteristics of Metal Particulate Media with a Thin Magnetic Layer	1134
.....K. EJIRI, H. INABA, T. MITSUHASHI, Y. KITAHARA and N. ABE	
Accommodation Response to Binocular Stereoscopic Images and Their Viewing Conditions	1137
.....NOBUYUKI HIRUMA and TADAHIKO FUKUDA	
1994 SMPTE Advanced Television and Electronic Imaging Conference.....	1145

